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Docket No.: 46906-2-DIV (71699)

AF/1652  
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Subroto CHATTERJEE

Examiner: M. Rao

Serial No.: 09/282,879

Group: 1652

Filed: March 31, 1999

For: RECOMBINANT N-SMASES AND NUCLEIC ACIDS ENCODING SAME

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*Patricia A. Barnes*  
Patricia A. Barnes

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Sir:

RESPONSE

In response to the Office Action dated October 25, 2004, Applicants request reconsideration of the application in view of the following amendments and remarks.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks/Arguments begin on page 5 of this paper.

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claims 1-12. Canceled.

13. (presently amended) A method for identifying a compound useful in the treatment of a human neutral sphingomyelinase related disorder, comprising binding a human neutral sphingomyelinase cleavage target to a solid support, contacting the solid support with a candidate pharmacological agent with and a recombinant human neutral sphingomyelinase having an amino acid sequence represented by SEQ ID NO. 2 or fragment thereof, or a derivative of the amino acid sequence represented by SEQ ID NO. 2, the method further comprising and analyzing the mixture of the candidate agent, and human neutral sphingomyelinase or the fragment and the cleavage target or the derivative, wherein the analyzing step further comprises comparing enzyme activity in the presence and absence of the agent, wherein the fragment or derivative has at least about 50% of the activity of the protein of SEQ ID No. 2, and wherein the fragment or derivative of the recombinant human neutral sphingomyelinase is at least about 70% identical to the protein of SEQ ID No. 2

14. (original) The method of claim 13 wherein the human neutral sphingomyelinase has a sequence represented by SEQ ID NO:2.

15. (presently amended) The method of claim 13 wherein

- 1) a mixture is formed of i) the ~~the~~ human neutral sphingomyelinase cleavage target, ii) the human neutral sphingomyelinase or fragment or derivative thereof, and iii) a candidate pharmacological agent;
- 2) the mixture is treated under conditions whereby, but for the present presence of the candidate agent, the human neutral sphingomyelinase or fragment or

~~derivative~~ cleaves the cleavage target to yield a the cleavage product; and

3) the presence of the cleavage product is detected, wherein a reduced concentration of the cleavage product relative to a control mixture that does not contain the candidate agent identifies the candidate agent as a compound potentially useful in the diagnosis or treatment of a human neutral sphingomyelinase related disorder.

16. (original) The method of claim 15 wherein the human neutral sphingomyelinase cleavage target is sphingomyelin.

17.(previously presented) The method of claim 15 wherein the human neutral sphingomyelinase cleavage product is ceramide.

Claims 18-31. Canceled.

32. (presently amended) The method of claim 13, wherein the fragment ~~or derivative~~ of the recombinant human neutral sphingomyelinase is at least about 30 amino acids in length.

33. (presently amended) The method of claim 32, wherein the fragment ~~or derivative~~ of the recombinant human neutral sphingomyelinase is at least about 50 or 70 amino acids in length.

34. (presently amended) A method for identifying a compound useful in the treatment of a human neutral sphingomyelinase related disorder, comprising contacting a candidate pharmacological agent with a recombinant human neutral sphingomyelinase having an amino acid sequence represented by SEQ ID NO. 2 and a human neutral sphingomyelinase cleavage target bound to a solid support, and analyzing the mixture of the candidate agent and human neutral sphingomyelinase, wherein the analyzing step further comprises comparing enzyme activity in the presence and absence of the agent..

35. (presently amended) The method of claim 34 wherein,

- 1) a mixture is formed of i) a the human neutral sphingomyelinase cleavage target, ii) the human neutral sphingomyelinase, and iii) a the candidate pharmacological agent;
- 2) the mixture is treated under conditions whereby, but for the present presence of the candidate agent, the human neutral sphingomyelinase cleaves the cleavage target to yield a the cleavage product; and
- 3) the presence of the cleavage product is detected, wherein a reduced concentration of the cleavage product relative to a control mixture that does not contain the candidate agent identifies the candidate agent as a compound potentially useful in the treatment of a human neutral sphingomyelinase related disorder.

36. (previously presented) The method of claim 35 wherein the human neutral sphingomyelinase cleavage target is sphingomyelin.

37. (previously presented) The method of claim 36, wherein the human neutral sphingomyelinase cleavage product is ceramide.